

Recent Improvements in Benders and Bi-morph Mirrors for Synchrotron Radiation

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Bender concepts will be introduced along with recent results for slope error. 1 micro-radian RMS over a length of 1.1 meters has been achieved with an adjustable radius of curvature of 3 km to infinity. A new bender design will be introduced which is fully UHV compatible. Finally, the use of bi-morph mirrors in the KB configuration for adaptive correction of wavefront defects further upstream in the beamline will be introduced. This configuration can correct problems from mirror distortion, crystal distortion, and, in general, any thermal bump on the upstream optics. This concept has proven very powerful, and is applied widely in the astronomy and laser fields